

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Lin, et al.

Serial No.: 08/182,183

Group Art Unit No.: 1812

Filed: May 23, 1994

Examiner: Allen, M.

For: GLIAL CELL LINE-DERIVED NEUROTROPHIC FACTOR

Docket No.: SYNE-225E

**TRANSMITTAL OF SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT  
BEFORE  
MAILING DATE OF EITHER A FINAL ACTION OR NOTICE  
OF ALLOWANCE (37 CFR 1.97(c))**Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

Under the guidelines of 37 C.F.R. 1.97, applicant(s) submit a copy of (each of) the reference(s) listed on the attached supplemental PTO-1449 (Modified) form for consideration by the Examiner.

The information disclosure statement transmitted herewith is being filed after three months of the filing date of this national application or the date of entry of the national stage as set forth in § 1.491 in an international application or after the mailing date of the first Office action on the merits, whichever event occurred last but before the mailing date of either:

- (1) a final action under § 1.113 or
- (2) a notice of allowance under § 1.311,  
whichever occurs first.

**CERTIFICATION OR FEE**

Accompanying this transmittal is

A. ☐ a certification as specified in 37 CFR 1.97(e):**CERTIFICATION**

I, the person(s) signing below certify

- ☐ that each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement. 37 CFR 1.97(e)(1).

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner of Patents, Washington, D.C. 20231, on the date appearing below

January 23, 1996

Date

Freddie Craft

OR

- ☐ that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in § 1.56(c) more than three months prior to the filing of the statement. 37 CFR 1.97(e)(2).

- B. ☒ the fee set forth in 37 CFR 1.17(p) for submission of an information disclosure statement under § 1.97(c). (\$220.00).

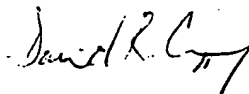
## FEE PAYMENT

(complete this item if applicable)

Applicant elects the option to pay the fee set forth in 37 CFR 1.17(p) for submission of an information disclosure statement under § 1.97(c) (\$220.00).

Please charge Deposit Account No. 01-0519 in the amount of \$220.00 (37 C.F.R. 1.97(c)). The Commissioner is hereby authorized to charge any additional fees which may be required or credit any overpayment to Deposit Account No. 01-0519. An original and one copy are enclosed.

Respectfully submitted,



Daniel R. Curry  
Attorney for Applicant(s)  
Registration No.: 32,727  
Phone: (805) 447-8102  
Date: January 23, 1996

Please send all future correspondence to:

U.S. Patent Operations/DRC  
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Modified Form PTO-1449	Any. Docket No.	SYNE-225E	Serial No.	08/182.183
	LIST OF REFERENCES CITED BY APPLICANT			
	(Use several sheets if necessary)			
	Applicant	Lin, et al.		
	Filing Date	May 23, 1994	Group	1812

## U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	AA	4,518,526	May 21, 1985	Kenneth C. Olson			
	AB	4,742,003	May 3, 1988	Derynck, et al.			
	AC	4,886,747	Dec 12, 1989	Dernyck et al.			
	AD	4,892,538	Jan 9, 1990	Aebischer et al.			
	AE	5,011,472	Apr 30, 1991	Aebischer, et al.			
	AF	5,017,735	May 21, 1991	Fellmann et al.			
	AG	5,106,627	Apr 21, 1992	Aebischer et al.			
	AH	5,158,881	Oct 27, 1992	Aebischer, et al.			
	AI	5,215,969	Jun 1, 1993	Springer et al.			
	AJ	5,250,414	Oct 5, 1993	Schwab, et al.			
	AK	5,276,145	Jan 4, 1994	Jane E. Bottenstein			
	AL	5,283,187	Feb 1, 1994	Aebischer et al.			
	AM	5,284,761	Feb 8, 1994	Aebischer, et al.			

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	BA	EP 233838 A2	Aug 26, 1987	EPO			YES NO
	BB	WO 91/10470	July 25, 1991	PCT			

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	CA	Aebischer et al. (1991), 'Long-Term Cross-Species Brain Transplantation of a Polymer-Encapsulated Dopamine-Secreting Cell Line', <i>Exper. Neurol.</i> , <u>111</u> :269-275.
	CB	Bakhit et al. (1991), 'Increase in glia-derived nerve growth factor following destruction of hippocampal neurons', <i>Brain Research</i> , <u>560</u> :76-83.
	CC	Beltz et al. (1983), 'Isolation of Multigene Families and Determination of Homologies by Filter Hybridization Methods', <i>Methods in Enzymology</i> , <u>100</u> :266-285.
	CD	Bohn et al. (1989), 'THE DEVELOPMENT OF MESENCEPHALIC DOPAMINERGIC NEURONS <i>IN VITRO</i> IS AFFECTED BY NEUROTROPHIC ACTIVITIES DERIVED FROM NEURAL CELL LINES', <i>Soc. Neurosci. Abs.</i> , <u>15</u> :277.
	CE	Burt, David W. (1992), 'EVOLUTIONARY GROUPING OF THE TRANSFORMING GROWTH FACTOR- $\beta$ SUPERFAMILY', <i>Biochemical and Biophysical Communications</i> , <u>184</u> (2):590-595.
EXAMINER:		Date Considered:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Modified Form PTO-1449	Atty. Docket No. <b>SYNE-225E</b>	Serial No. <b>08/182,183</b>
<b>LIST OF REFERENCES CITED BY APPLICANT</b>  (Use several sheets if necessary)	Applicant <b>Lin, et al.</b>	
	Filing Date <b>May 23, 1994</b>	Group <b>1812</b>

EXAMINER'S  
INITIALS**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

DA	Collins (1978), 'Axon Initiation by Ciliary Neurons in Culture', <i>Develop. Biol.</i> , <b>65</b> :50-57.
DB	Creighton et al., in PROTEINS; STRUCTURES & MOLECULAR PROPERTIES (Freeman Co., NY), pp. 39-42, (1984).
DC	Dayhoff, in Atlas of Protein Sequence and Structure Vol. 5, p. 124 (1972), National Biochemical Research Foundation, Washington, D.C.
DD	Edgar et al. (1979), 'INDUCTION OF FIBRE OUTGROWTH AND CHOLINE ACETYLTRANSFERASE IN PC12 PHEOCHROMOCYTOMA CELLS BY CONDITIONED MEDIA FROM GLIAL CELLS AND ORGAN EXTRACTS', <i>Experimental Cell Research</i> , <b>121</b> :353-361.
DE	Friedman et al. (1987), 'The toxicity of MPTP to dopamine neurons in culture is reduced at high concentrations', <i>Neuroscience Letters</i> , <b>79</b> :65-72.
DF	Gentry et al. (1989), 'Expression and Processing of Recombinant Pre-Pro-Transforming Growth Factor Beta-1', <i>Growth Inhibitory and Cytotoxic Polypeptides</i> (Alan R. Liss, Inc.), 143-154.
DG	Heikkila et al. (1984), 'BEHAVIORAL PROPERTIES OF GBR 12909, GBR 13069 AND GBR 13098: SPECIFIC INHIBITORS OF DOPAMINE UPTAKE', <i>Euro J. Pharmacol.</i> , <b>103</b> :241-248.
DH	Hofer and Barde (1988), 'Brain-derived neurotrophic factor prevents neuronal death <i>in vivo</i> ', <i>Nature</i> , <b>331</b> :261.
DI	Houlgatte et al. (1989), 'Secretion of Nerve Growth Factor in Cultures of Glial Cells and Neurons Derived From Different Regions of the Mouse Brain', <i>Journal of Neuroscience Research</i> , <b>24</b> :143-152.
DJ	Kim et al. (1991), 'EXPRESSION OF BOVINE INHIBIN $\beta$ SUBUNIT IN <i>ESCHERICHIA COLI</i> ', <i>Int. J. Biochem.</i> , <b>23</b> (11):1307-1313.
DK	Kozak (1987), 'An analysis of 5'-noncoding sequences from 699 vertebrate messenger RNAs', <i>Nucleic Acids Res.</i> , <b>15</b> :125-48.
DL	Leibrock et al. (1989), 'Molecular cloning and expression of brain-derived neurotrophic factor', <i>Nature</i> , <b>341</b> :149-152.
DM	Lin et al. (1989), 'Purification, Cloning, and Expression of Ciliary Neurotrophic Factor (CNTF)', <i>Science</i> , <b>246</b> :1023.
DN	Lin et al. (1993), 'PURIFICATION OF GDNF; A GLIAL CELL LINE-DERIVED NEUROTROPHIC FACTOR FOR MIDBRAIN DOPAMINERGIC NEURONS', <i>Society for Neuroscience Abstracts</i> , <b>19</b> (1-3):651.
DO	Lo et al. (1990), 'A STRIATAL-DERIVED NEUROTROPHIC FACTOR (NTF): RELATIONSHIP TO PARKINSON'S DISEASE (PD)', <i>Soc. Neurosci. Abstr.</i> , <b>16</b> :809.
DP	Maisonpierre et al. (1990), 'Neurotrophin-3: A Neurotrophic Factor Related to NGF and BDNF', <i>Science</i> , <b>247</b> :1446-1451.
DQ	Manthorpe et al. (1986), 'An Automated Colorimetric Microassay for Neurotrophic Factors', <i>Develop. Brain Res.</i> , <b>25</b> :191-198.
DR	Nijima et al. (1990), 'Enhanced survival of cultured dopamine neurons by treatment with soluble extracts from chemically deafferented striatum of adult rat brain', <i>Brain Res.</i> , <b>528</b> :151-154.
DS	Norrgren et al. (1980), 'RELEASE OF NERVE GROWTH FACTOR BY HUMAN GLIAL CELLS IN CULTURE', <i>Experimental Cell Research</i> , <b>130</b> :31-39.
DT	Purchio et al. (1987), 'Synthesis of an active hybrid growth factor (GF) in bacteria: transforming GF- $\alpha$ /vaccinia GF fusion protein', <i>Gene</i> , <b>60</b> :175-182.

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EXAMINER'S  
INITIALS**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

EA	Schubert et al. (1974), 'Clonal cell lines from the rat central nervous system', <i>Nature</i> , <b>249:224-227</b> .
EB	Sofer et al. (1983), 'Designing an Optimal Chromatographic Purification Scheme for Proteins', <i>Biotechniques</i> , <b>1(4):198-203</b> .
EC	Thoenen and Edgar (1985), 'Neurotrophic Factors', <i>Science</i> , <b>229:238-242</b> .
ED	Tresco et al. (1992), 'Polymer Encapsulated Neurotransmitter Secreting Cells', <i>ASAIO</i> , <b>38:17-23</b> .
EE	Ullrich et al. (1983), 'Human 8-nerve growth factor gene sequence highly homologous to that of mouse', <i>Nature</i> , <b>303:821-825</b> .
EF	Varon and Bunge (1979), 'TROPIC MECHANISMS IN THE PERIPHERAL NERVOUS SYSTEM', <i>Ann. Rev. Neuroscience</i> , <b>1:327-361</b> .
EG	Williams, et al. (1986), 'Continuous infusion of nerve growth factor prevents basal forebrain neuronal death after fimbria fornix transection', <i>Proc. Natl. Acad. Sci. USA</i> , <b>83:9231</b> .
EH	Winn et al. (1991), 'Behavioral Recovery following Intrastriatal Implantation of Microencapsulated PC12 Cells', <i>Exper. Neurol.</i> , <b>113:322-329</b> .
EI	Wurm, Florian M. (1990), 'Integration, Amplification and Stability of Plasmid Sequences in CHO Cell Cultures', <i>Biologicals</i> , <b>18:159-164</b> .
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y to: Deb  
1/23/96

THE PATENT OFFICE IS HEREBY REQUESTED TO ACKNOWLEDGE  
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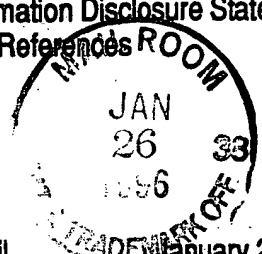
Applicants: Lin, et al. Filed: May 23, 1994 Serial #: 08/182,183

Examiner: Marianne P. Allen Group Art Unit: 1812

Title: GLIAL CELL LINE-DERIVED NEUROTROPHIC FACTOR

2 pages Transmittal of Supplemental Information Disclosure Statement

3 pages PTO Form 1449 + 49 Supporting References



SYNE-225-E  
DRC:khh

Via First Class Mail

January 23, 1996

Under the provisions of 35 U.S.C. 41, the following information is being furnished to the Patent Office for its use in the examination of the application for a patent.

The information disclosure statement transmitted herewith is being furnished to the Patent Office for its use in the examination of the application for a patent.

**AMGEN**

(1) Amgen Center  
1640 Dehavilland Drive  
Thousand Oaks  
California 91320-1789

Daniel R. Curry

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Assistant Commissioner of Patents  
Washington D.C. 20231

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